EAST WEST UNIVERSITY
Department of Computer Science and Engineering
B.Sc. in Computer Science and Engineering Program
Lab II Examination, Spring 2022 Semester

Course:	**CSE246 Algorithm, Section-03**
Instructor:	**Jesan Ahammed Ovi, Senior lecturer, CSE Department**
Full Marks:	**13 (13 will be considered for final grading)**
Time:	**1 Hour**

Note: There are TWO questions, answer ALL of them. Course Outcome (CO) and Mark of each question are mentioned at the right margin.

1. Write a program in C/C++/JAVA/Python that takes a directed weighted graph as input. Apply Dijkstra algorithm to find shortest path from source node to all other nodes with cost. Take source node as input from user. See sample input output format for better understanding. You have to maintain the input output format as given. [CO1, Marks: 8]

Sample input	Sample output
4 6 0 1 7 2 0 10 3 2 5 1 3 1 2 1 10 1 2 10 Source 0	0->1 Cost: 7 0->1->2 Cost: 17 0->1->3 Cost: 8

2. Write a program in C/C++/JAVA/Python that takes n number of coins as input. Consider the supply of each coin is infinite. Design a dynamic programing solution that determines whether a given coin C can be changed by those n number of coins. If possible, find the required coins otherwise just print not possible. [CO3, Marks: 5]

Sample input	Sample output
5 1 5 10 20 50 Amount: 17	Possible Required coins: 1, 1, 5, 10
5 3 5 10 100 500 Amount: 16	Not possible